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MIGRANTS' DESTINATION CHOICE: THE EFFECT OF EDUCATIONAL ATTAINMENT

EVIDENCE FROM OECD COUNTRIES

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Abstract: The excess demand of highly educated workers stands in contrast to the disproportional representation of low skilled workers in unemployment rates. Skill-level compositions of immigrant flows play a pivotal role in stimulating investments and economic growth. Destination countries are thereby faced with the challenging task of influencing their relative attractiveness. This study investigates the impact of education on migrants' destination choices so as to provide adequate knowledge regarding the preferences of highly educated migrants. A probit approach is used to regress the share of tertiary educated in source-destination combinations on a set of independent variables. The evidence indicates that highly educated people are less affected by indirect costs such as social distance and attitude towards migrants among the destination population. In contrast, policies aimed to facilitate entrance into the labour market are found to increase the share of tertiary educated. One of the most intriguing findings is that tertiary educated migrants exhibit a more positive attitude towards higher tax rates. A further look at the preferences for government expenditures suggest that grants and spending aimed to uphold a minimum standard of living for individuals have a negative impact on the share of tertiary educated, whereas spending on areas benefiting the general public is found to have a positive effect.

Keywords: high-skilled immigration, human capital, international migration

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1 Introduction

Statistics show that there exist national differences in the relative skill level of migrants. In the year 2000, the share of migrants in the UK who had completed a tertiary education was close to 40 % while Germany's share was just above 17 %. Less than half of the foreign born population in Spain had obtained an education higher than low secondary school whereas almost 80 % of Canada's foreign born population had gone on to upper-secondary education (Dustmann & Glitz, 2011). Moreover, studies have shown that there are positive externalities specifically related to high skilled migration on both destination and origin country level. The possibility of migration for highly skilled individuals has been proven to increase the average level of human capital per worker in the origin country as it increases incentives for education (Stark et al., 1997). Education has also been found to act as a positive influence on the success of migrants' integration into destination societies (Danzer & Ulku, 2008). In addition, there is a strong relationship between education and long-term growth (Lucas, 1988).

In contrast, low skilled workers are challenged by disproportionally large unemployment rates (Oesch, 2010). There is an overall decreasing demand for low skilled workers (Van der Ende et al., 2014). As high unemployment rates prevail in the low-skilled section, technological advances in combination with an ageing population contribute to an increasing excess demand of high skilled workers (Zimmermann, 2004[1]).[2] It is argued that the aging population will increase the availability of low-skilled jobs through job creation in the health care sector and other non-traded areas. A caveat to that statement is that these jobs are increasingly dependent on physical proximity to high-skilled workers (Manning, 2004). Further, there exists a relationship between high skilled workers and the availability of low skilled jobs. Zimmermann (2004) states that the existence of an excess demand for high skilled workers decreases incentives to hire low skilled.

Muysken et al. (2011) found that immigration will help to mitigate the problem of ageing populations conditional on at least two factors; the first being that immigrants need to gain access to the labour market. Secondly, they present the argument that the proportion of low-

[1] A revised version of the paper was presented at the high-level expert conference 'Jobs for Europe' on the Social Policy Agenda for the European Union on October 2004.

[2] Predictions made by the United Nations indicate that all European countries will face a problem of ageing and declining populations, over the following fifty years. Countries facing these new challenges will require extensive reassessments of several established policies and programs, in order to handle the problem (Bouvier, 2001).

skilled immigrants should not exceed that of the native population so as to prevent unemployment from rising.

> Thus to stimulate investments and economic growth it is of utmost importance that immigration policy as a means to mitigate the aging problem should not only focus on the number of immigrants, but also on their employability by keeping the skill structure in line with the skill distribution of domestic labour market entrants. (Muysken et al., 2011).

The challenges faced by recipient countries (further referred to as destination countries) are to influence their relative attractiveness. Consequently, it is in their interest to obtain an understanding of highly educated migrants' preferences, especially in relation to the low skilled. This study investigates the impact of education on migrants' destination choices so as to provide adequate knowledge regarding the preferences of highly educated migrants.

Migration flows is an area that has been studied for centuries, resulting in a myriad of models and theories that are constantly evaluated and developed. The neoclassical model of push and pull factors is the most frequently used to explain the movements of migrants when interested in the specific determinants of their location choices. Previous research into these determinants is quite extensive and a large set of variables has been tested. General unanimity exists on the impact of factors that proxy for economic attractiveness, social and physical distance as well as a network effects (see Pedersen et al., 2004; Mayda, 2010). The effect of education will be studied through its impact on these specific determinants. The generated results will then indicate areas to which governments desiring to attract highly educated should put their focus.

The scope of this paper excludes all interest of push factors, e.g. factors affecting migrants in the decision of whether to migrate or not, and focus lies solely on factors that affect the destination decision. The effect of education on migrant's destination choice is, to our knowledge, a previously unexplored area of research and the results will contribute to the understanding of highly educated migrants' preferences in relation to destination countries. The results have policy implications both on a national level with regards to how to attract highly skilled people as well as on an international level as it relates to the topic of fair burden sharing.

1.1 Outline of the paper

The following section provides necessary background information regarding existing migration theories that will be addressed in this paper, as well as recent research into the specific topic of migrants' destination choice. The model developed in section 3 utilises the assumptions of individual utility maximizations. Previous research on the fundamental determinants of the choice is applied through the inclusion of a set of independent variables controlling for destination country pull factors, costs of migration and network effects.

Primary data observing migration flows between 39 destination and 235 origin countries as well as the migrant's educational attainments are combined with observations regarding the independent variables. The data is outlined in section 4. The preferences of the highly educated in their choice of destination country are then observed through a probit regression of the relative share of tertiary educated on this set of independent variables. The results and associated discussion is presented in section 5. The most important conclusions are presented in section 6.

2 Background

2.1 Theories of international migration flows

The so-called "push" and "pull" factors are the concepts used in the *neoclassical economic theory* of migration to describe the movements of migrants. Push factors are origin country factors that invoke a desire to leave, such as war, imminent threats to personal integrity or poor economic prospects. Pull factors are factors on destination country-level, such as GDP per capita and accessibility to employment. The theory can then be divided into macro economical and micro economical aspects where the macro economical view emphasises the geographic differences in supply and demand of labour (Massey et al., 1993). This classical view argues that a large endowment of labour relative to capital renders countries with a low equilibrium wage, resulting in movement from these areas to countries with relatively smaller labour-to-capital ratios and thus higher wages. The micro economical view states that individual migrants are rational actors that decide to move based on the anticipation of a positive net return.

Social network theory on the other hand presents the idea of family and community effects. According to the theory, family and friendship ties as well as a shared community origin affect the choice of destination (Massey et al., 1993). The aspect of shared community origin facilitates migration through the creation of sub-cultures (Pedersen et al., 2004). The positive functions of existing networks are that useful information and contacts can be provided so as to direct migrants to destinations where help regarding accommodation, finding a job, financial assistance and other kinds of support is available (King, 2012). Chain migration is the term used to describe the process in which individuals from a particular area are likely to follow previously departed migrants from that same area to a mutual migration destination. By doing so, they are able to benefit from the social capital created by the "pioneer" migrants. In general, the social network theory describes the process where networks act to reduce the costs as well as risks of migration and thereby increases the expected yield of the decision to migrate.

There are also negative effects that might arise as a consequence of large shared-origin populations. At an individual level, there is an increase in competition among immigrants that could cram out the positive externalities from the network effect. At the national level, countries might experience integration problems due to things such as decreased incentives to learn the native language. These negative externalities are described in the following way:

> After the immigrant population reaches a particular size, relations can become more impersonal, and the arrival of someone from "back home" may not evoke the same feeling of responsibility and benevolence. Network externalities can therefore be subject to diseconomies of size of the immigrant population. (Epstein, 2002)

The above theories can all be criticised on the grounds that migrants by no means are a homogenous group. To begin with, not all migrants have the luxury of picking and choosing amongst destination countries. Certain groups of migrants, such as asylum seekers and refugees, are subject to greater limitations in their decision-making (Böcker & Havinga, 1998). Further criticism has been directed at the assumption of individual utility maximization. Stark and Bloom (1985) presented a new view on the decision making of migrants in their paper "The New Economics of Labour Migration". The micro-economical view of the neoclassic economic theory views migration as a decision made by isolated individuals, based on personal utility maximization with regards to both monetary and social aspects. *The*

household theory, presented by Stark and Blom (1985), argues for the decision to be a household utility maximization problem determined collectively by a unit of related people with the additional possibility to diversify risk exposure. Most developed countries has well functioning insurance markets as well as government welfare programmes that assist in that aspect, but many family units in developing countries are exposed to risk with regards to local conditions. Migration is thus synonymous with the possibility of adding an additional income stream that is weakly or negatively correlated with these conditions.

2.2 Previous Research

International flows of migration are of universal interest and have thereby been studied for centuries. Models and theories are constantly evaluated and developed but more recent is the interest in the determinants of migrants' location choices. As previously described, the research question of this paper aims to investigate the effect of education on individual migrants' destination choices. The location decision is a decision that arises after the migrant has made the choice of whether to migrate or not. Accounting for factors that affect the amount of people willing to migrate would create issues relating to selection bias. For example, educated persons might have higher utility of migrating and therefore be overrepresented among migrants. The sole interest of this paper thus lies on factors that affect migrants' location choices, resulting in the exclusion of push factors from the equation.

Previous studies have experimented with a wide range of variables as indicators for migrants' location choices, with varying results. General unanimity exists regarding the decisive impact of pull factors such as GDP per capita, distance, common language, colonial ties as well as the stock of immigrants with a shared national origin (see Pedersen et al., 2004; Mayda, 2010). This impact of existing migrant stocks is consistent with the social networking theory presented in Section 2.1. Geis et al. (2013) found that public health expenditures, PISA-scores, employment protection and union coverage as well as unemployment and pension benefits all had significant impact on destination choices. Kamemera et al. (2000) proved migration to be positively correlated with political rights and individual freedom as well as negatively correlated with political instability. Borjas (1999) gave rise to the idea of the welfare magnet-effect by arguing that welfare provisions act as a pull factor for immigrants. The welfare magnet-theory gained support as well as critique and the empirical evidence of welfare magnet-effect has been mixed. Schulzek (2012) found welfare provisions to be an important magnet for both labour and asylum migrants, whereas Kaushal (2005) demonstrated that

safety-net programmes have little effect on the location choices of low-skilled, unmarried immigrant women. In addition, Zavodny (1997) found little evidence for the welfare magnet-theory but instead stressed the impact of the existing foreign-born population. Fafchamps and Shilpi (2008) found population density in addition to social proximity to have a strong significant effect.

Research on the determinants of highly educated migrants´ destination choices has on the other hand been limited, despite a global interest in attracting the highly skilled. As described below, there exist differences between the aggregate educational level of migrants among countries. Dustmann and Glitz´s (2011) paper presents some interesting findings with regard to educational attainment of migrants in different countries as well as national differences in migrants´ educational attainment relative to the native-born population. For example, only 22 % of the foreign-born population in Canada, aged 25-64, report lower secondary education as their highest educational attainment. For Spain, France and Italy, that share is about 50 %. In Australia, Canada and the United Kingdom, the share of foreign-born with tertiary education exceeds the share of the native born population. The opposite is observed in the United States, France and Germany (Dustmann & Glitz, 2011).

Due to data restrictions, previous research regarding the effect of educational attainment has in general been restricted to unilateral analyses of country-specific policy changes. This paper is the first that, to our knowledge, investigates the effect of education on destination choice. Closest to this paper in terms of scope and research question is Czaika and Parson´s paper "The Gravity of High-Skilled Migration Policies", in which they looked into the effect of different immigration policies aimed at attracting highly skilled workers (albeit using occupational status as determinant of skill level). They used a dataset containing information on migrants´ movements between 185 origin countries and 10 (OECD members) destination countries as well as their occupational classifications in combination with a dummy approach on the implementation of different immigration policies. Point-based systems were found to have a better effect on the selection process than the requirement of a job offer. Offers of permanent residence proved to have a greater effect on non-skilled migrants than high-skilled. As expected, bilateral agreements such as recognitions of diplomas and social security convergences had a positive effect on highly skilled immigration. Increases in wages for highly skilled employees were also found to increase skilled immigration. Factors such as migrant networks, neighbouring countries, common languages etc. had a greater attraction on

low skilled migrants whereas distance was found to have less impact on the highly skilled (Czaika & Parsons, 2015).

3 Model

A set of assumptions are made to enable the development of a model that explains the effect of education on migrants' destination choices. The theory presented below follows Zavodny (1997) and Pedersen et al. (2004) with minor adjustments to fit the model to the research question of this paper. Migrants are assumed to have a utility maximizing behaviour meaning that they are rational to the extent that they act to increase their self-utility. That means that after comparing all available alternatives, migrants will choose the country that provides them with the highest utility. A further assumption is that of free will and individual decisions, which is in line with the neoclassical economic theory. As previously discussed, there are several approaches pertaining to the decision assumptions that are utilized by theories in the field of migration. Some argue it to be a household decision whereas others assume the decision is made on an individual level. The assumption that migrants decide individually on where to move is a limitation, though a necessity to perform this regression. The individual decision-assumption is further facilitated through the exclusion of migrants under the age of 15 as they are assumed to be limited with regards to the individual decision assumption.

This model, aimed to explain the grounds of destination decision, relies on the first assumption of utility-maximization presented above. It expresses an individual *i*'*s* expected utility of going to country *d* at time *t*, given the fact that the migrant lived in country *o* at time *t – 1*, as follows:

$$U_{odit} = U(S_{odit} + D_{od} + X_{dit} + X_{oit}) \qquad \textbf{Equation (1)}$$

The vector S_{odit} reflects factors that affect the utility of an individual living in country *d* at time *t*, given that the person lived in *o* at time *t-1*. *d* represents destination country (d = 1, 2,…, 32), *o* denotes origin country (o=1, 2,…, 220) and *t* represents time. In other words, it includes variables that utilize a relationship between origin and destination countries. Further on, D_{od} reflects social and psychological costs as well as monetary costs that occur when moving to country *d* from country *o*. The variables included in X_{dit} represents pull factors and thus attributes of the destination country, whereas X_{oit} represents push factors originating in

the origin countries. As previously discussed, the decision of where to migrate is a choice that arises post migration decision. This effectively excludes any interest for push-factors in the context of the research question of this paper.

Following Zavodny (1997) an assumption is made that the utility of individuals' destination choice can be written as a linear equation:

$$U_{odit} = \alpha_1 S_{odit} + \alpha_2 D_{do} + \alpha_3 X_{dit} + \varepsilon_{odit} \qquad \textbf{Equation (2)}$$

where ε_{odit} is an idiosyncratic error term, i.e. an observation-specific random-error term with zero mean. An individual migrant is, as mentioned, assumed to have a utility maximizing behaviour and therefore at time *t* choose the country where the highest possible utility can be attained, given residence in country *o* at time *t-1*. The conditional probability, for the individual, of choosing country *d* out of the c possible destination countries (c=1, 2, …, 32) can be expressed as:

$$\Pr(d_{it}/o_{it-1}) = Pr[U_{odit} = \max(U_{io1t}, U_{io2t}, \dots, U_{io32t})] \qquad \textbf{Equation (3)}$$

The need for a model that can be applied to aggregate data leads to the development of equation 4. The equation expresses that the amount of migrants moving to a destination country will be the number of individuals whose utility is maximized when migrating to that location.

$$N_{odt} = \sum_i Pr[U_{odit} = \max(U_{io1t}, U_{io2t}, \dots, U_{io32t})] \qquad \textbf{Equation (4)}$$

Equation five is created by utilization of the assumption of a linear functional relationship (Pedersen et al., 2004):

$$N_{odt} = \beta_1 S_{odt-1} + \beta_2 D_{od} + \beta_3 X_{dt-1} + \mu_{odt} \qquad \textbf{Equation (5)}$$

where N_{odt} represents the number of migrants. The error term is assumed to have zero conditional mean and constant variance.

As previously described, the restriction made by the research question of this paper enables push-factors to be excluded from the equation. Further, the cost and pull factors are assigned the subscript t-1 so as to catch the lagged effect of the time-variant independent variables.

Observing the determinants of the highly educated migrants' destination choice in absolute numbers does not give much information when selecting out of the global pool of migrants. Such a regression would answer the question of which specific determinants attract highly educated, but exclude the issue that it might attract migrants with low education to a much greater extent. Therefore, the dependent variable is further developed to describe the share of tertiary educated migrants from a specific origin country to a specific destination country. One can think of the dependent variable as a set of binary responses. In this case 1 would indicate a migrant with tertiary education, 0 non-tertiary. Pooling these responses leads the creation of the share presented below. This approach allows for conclusions related to the research question of this paper, namely the *effect of education* on destination choices.

$$Share_{od} = \frac{T_{od}}{N_{od}} \qquad \textbf{Equation (6)}$$

where the variable *Share* stands for the percentage share of tertiary educated migrants, *T* for number of migrants with a tertiary education (3 or 4) and *N* number of migrants. The final equation is thus presented below:

$$Share_{odt} = \beta_1 S_{odt-1} + \beta_2 D_{od} + \beta_3 X_{dt-1} + \mu_{odt} \qquad \textbf{Equation (7)}$$

Further, in the robustness check-section, a regression is estimated in which destination country specific fixed effects are controlled for**:**

$$Share_{odt} = \beta_1 S_{odt-1} + \beta_2 D_{od} + \beta_3 X_{dt-1} + F_d + \mu_{odt} \qquad \textbf{Equation (8)}$$

where F_d reflects destination country specific fixed effects.

3.1 Model specification

The regressions are estimated using the probit specification of the generalized linear model. This type of modelling allows for fractional dependent variables. The model is fully robust

and relatively efficient under the Generalized Linear Model (GLM) assumptions (Papke & Wooldridge, 1996). [3]

The coefficients estimated by the probit approach are limited in terms of interpretation. A positive coefficient indicates that a one unit increase in the predictor increases the z-score, whereas the negative coefficient indicates that a one unit increase in the predictor decreases the z-score. The average marginal effects are calculated following the probit regression to circumvent this issue of interpretation. In a linear regression, the marginal effects are represented by the estimated coefficients. The S-shaped response curve resulting from a probit regression has a separate interpretation, as the marginal effects in this case are dependent on the values of the independent variables. The average marginal effects calculated acts as an approximation through estimating the effect a 1 unit increase of a independent variable has on the dependent variable, keeping all other variables fixed at their average. As previously mentioned the marginal effects vary with the value of the independent variables, so one should keep in mind that these are approximations.

3.2 Goodness of fit measures

Three regressions including different sets of variables will be performed to investigate their explanatory power. Regression (1) includes *Cost of migration* and *Network effect* variables (to be explained later on), regression (2) includes *pull factors* variables and regression (3) includes *Cost of migration*, *Network effect* and *Pull factors* variables.

When using a probit model, the explanatory value can be estimated by the McFadden's pseudo R-square:

$$McFadden´s\ pseudo\ R^2 = 1 - \frac{L_{ur}}{L_0} \qquad \textbf{Equation (9)}$$

where L_{ur} is the estimated log-likelihood function for the model with predictors and L_0 is the log-likelihood function estimate for the model with only an intercept. The pseudo R^2 will take

[3] The generalized linear model is based on three assumptions: Random component (GLM1), systematic component (GLM2) and link function (GLM3). GLM1, regards to the probability distribution of the dependent variable Y and assumes that all components of Y are independent and from the family of exponential distributions. GLM2 assumes that all p covariates are combined, creating a linear predictor $\eta = \beta X$. Finally, GLM3 assumes that the link function, which specifies the relationship between the random and systematic components, is differentiable and monotonic (Anderson et al., 2007).

on the value zero in the event that the model contributes no explanatory power (Wooldridge, 2013). [4]

4 Data

4.1 Dependent variable

The primary data is gathered from OECD's "Database on Immigrants from OECD and non-OECD countries" (DIOC). This data presents the stock of migrants in 39 destination countries as well as the migrants' origin countries (represented by 235 countries) and a number of additional variables. The data is transformed into flow through the use of the variable duration of stay. All migrants with duration of stay five years or more are excluded. By such, the individuals represented in the data have migrated less than five years previous to the year 2010/2011 and thus represents the flow of migrants from 2005/2006 to 2010/2011.

Restrictions in the availability of data for the independent variables presented below resulted in the exclusion of all non-OECD destination countries. Further, the variable educational attainment (included in the DIOC data) is utilized in the creation of the dependent variable. Educational attainment is classified into 4 levels. Pre-primary, primary and lower secondary education (assigned level 1), upper secondary, post-secondary and non-tertiary education (assigned level 2), first stage of tertiary education which is equivalent to a bachelor and/or master's degree (assigned level 3) and second stage of tertiary education, equivalent to a PhD (assigned level 4). The initial dataset contains an additional classification, namely 99. This classification includes migrants that have not completed any primary education but are also an indication of missing values. The fact that no difference is made between these two classifications leads to the forced exclusion of observations with the classifications 99. This limits the scope of the results of this paper and differences can thus only be observed amongst migrants that have obtained some level of education. The possible issue of a selection bias into the excluded category is addressed in the robustness check-section.

4.2 Independent variables

4.2.1 Pull factors

The regression includes a number of variables covering economic pull factors of the destination country (X_{dt-1}). These variables are optimally represented by their arithmetic

[4] The interpretation of McFadden's pseudo R^2 is not identical to the OLS R^2, but higher values indicate higher explanatory power.

average of the years 2004 to 2009 so as to capture the effect of the dependent variable that stretches over the years 2005/2006 to 2010/2011. This one-year lagged effect is included to control for the fact that migrants will base their decision on information available at the time of, or just previous to, departure. For example, the GDP level of a country in 2009 will not be available until the following year. Though, the optimal time spans are not available for all variables and adjustments are therefore made. See Appendix B for further information about the time aspect of the pull-factors.

The variable *Integration Index* is included to control for policy differences between countries. The variable is based on the 2010 Migrant Integration Policy Index (MIPEX, 2010) that quantifies migrants' opportunities for equal treatment and opportunity to participate in society. The index analyses 7 policy areas: labour market mobility, education, political participation, family reunion, access to nationality, long-term residence and anti-discrimination. Each area consists of 4 dimensions that are assigned a value of 1-3 points, 3 being the highest standards of equal treatment. The 4 dimensions are then averaged to give a score for each policy area. To create an overall ranking, the policy scores are summarized and averaged as well. The ranking is then converted to a 0-100% scale, where 100% is the top score.

Gross Domestic Product p.c. (GDPC) and *GDP growth* (GDPG) are included in the regression to act as proxies for economic status. Keita (2014) has previously found GDPC to have a positive significant effect on bilateral migration flows. The natural log of GDPC is used to reduce the spread of the distribution. Employment opportunity, proxied by *Unemployment rates*, is another factor found to affect migrants' choice of destination country. Pedersen et al. (2004) found a negative relationship between unemployment rate and number of migrants whereas Zavodny (1997) found indicators of a positive relationship. The *Education* variable, reflecting the percentage of total government expenditure spent on education, is gathered from WDI (World Development Indicators Database). It acts as a proxy for the prioritization of education in the destination country which, according to Geis et al. (2013), has a positive effect on migrant inflows.

Several branches of social expenditure as well as taxation are included as they are assumed to be pull factors (Schulzek, 2012) relating to Borjas (1999) welfare magnet theory. The data for

the variable *Tax rate* is assembled from WDI and argued to act as welfare state indicators.[5] The argument is that higher tax rates are highly correlated with public expenditure. For example, the so called Nordic model has a greater share of public and social expenditure relative to GDP than other models, accompanied by higher taxation (Kautto, 2001).

The social expenditure variables *Old age, Family, Labour market programmes, Unemployment aid* and *Public health expenditure* are included to further investigate the impact of government spending. The variables are all collected from OECD's social expenditure database (SOCX) and estimated using their average percentage spending relative to GDP. The variable *Old age* includes expenditure such as pension, residential care and home-help services. Research has previously found that *Public health expenditure* attract migrants whereas Old age deter them (Geis et al., 2013). *Family* benefits include such governmental spending as maternity/parental leave, early childhood education and care as well as home help and family allowances. These are in general benefits that reduce the obstacles of combining work and family, which may also influence migration. *Labour market programmes* includes expenditures on employment incentives, direct job creation and start-up incentives and can be argued to capture the migration effect of government intervention aimed at facilitating labour market participation. In contrast, the variable *Unemployment aid* includes expenditure on unemployment compensation and severance pay, which can be argued to have a negative effect on the incentive to work (Layard et al., 2005).

Including *Employment protection* indicators is a way to control for accessibility and ease of getting hired as well as fired. These counteract, as restrictions on dismissal generates protection for individuals in employment, whereas it increases the risk of hiring. The indicator is gathered from OECD and consists of a weighted, three sub- indicator resulting in a proxy on a scale of 0-6 (with 0 indicating least restrictions). The three sub- indicators are dismissal of employees on regular contracts (weight 5/12), strictness of regulation on temporary contracts (with the same weight) and the last sub indicator is for additional regulation of collective dismissal with the weight of 2/12.

The variable *GINI* is included to measure the pull factor-effect of equality in income distribution. The data is gathered from OECD. The degree of inequality, in the distribution of

[5] Total tax rate measures the amount of taxes and mandatory contributions payable by businesses after accounting for allowable deductions and exemptions as a share of commercial profits. Taxes withheld (such as personal income tax) or collected and remitted to tax authorities (such as value added taxes, sales taxes or goods and service taxes) are excluded.

household income in a country, is measured by the Gini index. The index takes values between 0 and 1, with 0 indicating perfectly equal distribution and 1 complete inequality.

As the final pull-factor variable, *Attitude* is included as proxy of destination country residents' attitudes towards migrants. It is represented by OECD data reflecting the "Share of the population who think that their city or area of residence is a good place for migrants from other countries to live".

4.2.2 Cost of migration

Three variables are included as proxies for cost associated with migration. *Colony* is included to see if a shared colonial past influences the perception of cultural distance. It is constructed as a dummy variable where the value 1 depicts a colonial past, 0 otherwise. When perceived as close, better information and knowledge about potential destination countries might be provided and through that decrease costs of migration (Pedersen et al., 2004). The other dummy variable included is *Language* which indicates if the destination and origin country share a language that's spoken by at least 9% of the population in both countries (Mayer & Zignago, 2011). The language dummy is set to 1 if true, and 0 otherwise. Further, the variable *Distance* is included so as to control for the direct costs of migration, e.g. transportation costs (Mayda, 2010). The variable distance is calculated following the great circle formula that uses latitudes and longitudes and results in a geodesic distance between capital cities, expressed in 100 kilometres. The data for these three variables are gathered from CEPII (eng. Institute for Research on the International Economy).

4.2.3 Network effects

Network effect has, as previously mentioned, been found to have a significant impact on destination choice (see Pedersen et al., 2004; Mayda, 2010; Zavodny, 1997). The *Stock* of migrants in the same "network", meaning people from the same origin country that migrated to the same destination country, is thus included to control for network effects and chain migration. This includes the presence of family members and friends as well as other contacts that are easier to develop in such surroundings. The variable is collected from DIOC.

5 Results

Column 1 in Table 1 presents the outcome of regressing the dependent variable on the costs and utility variables whereas column 2 excludes these variables in favour of the pull factors.

The combined regression is then presented in column 3. The pull factors do not differ to any great extent, neither in magnitude nor significance level. What can be observed relating to the effects of these econometric specifications are the differences in significance levels of the variables language, distance and stock. Stock faces a deduction in significance level from 1% to 5 % when controlling for pull factors, whereas distance and language become insignificant. This indicates that distance and language do not provide information that is unique and/or independent when controlling for pull factors variables. This issue of multicollinearity is investigated in the robustness section below.

A further look at Table 1 leads to the observation of increasing explanatory power as represented by the McFadden R-square. The regression including pull factors presents a higher explanatory power than the regression of network effects and cost variables, indicating pull factors to be important in explaining the relative levels of education amongst migrants. The combined regression presents the highest level of explanatory power, thus facilitating the argument to include the entire set in subsequent models.

Turning to the evidence presented in the third column, it somewhat surprisingly shows that tertiary educated migrants are more prone to move to countries with higher tax rate then their less educated counterparts. This effect of educational level stands in contradiction to the general idea that individuals with high income would prefer areas with lower tax rates (in relation to individuals with low income), under the assumption that highly educated migrants on an aggregate level earn a higher income than less educated migrants. This argument be can somewhat overlooked as the tax rate measure included in the data focuses on businesses commercial profits and excludes personal income taxes. A possible explanation for the observation that highly educated are more likely to move to areas with high (business) tax rates could be that education acts as to increase understanding of the benefits a welfare state entails. If education acts as to facilitate the understanding of the interactions between different aspects in society, it might lead highly educated to see beyond the immediate monetary losses associated with a higher tax rate.

The results of the tax rate variable are disputed by the coefficient presented to the GINI-variable. The positive impact of GINI is found to be significant on the 5% level, indicating that highly educated are drawn to areas with greater inequality than less educated migrants. One might expect that people who prefer higher tax rates also would value equality, as taxes

in some ways acts to distribute wealth. As an explanation to this observation, the GINI variable could be viewed as a proxy for other things than equality. For example, it could be argued that GINI proxies for the yield of investing in education e.g. increase the expected payoff to high skilled labour. This alternate view of the GINI variable is not contradictory to the tax rate finding.

Table 1 – *Presents average marginal effects*

VARIABLES	(1) Network effects and Cost	(2) Pull factors	(3) All variables
Pull Factors			
Tax Rate	---	0.0056(0.0008)***	0.0054(0.0009)***
Old Age	---	-0.0550(0.0055)***	-0.0535(0.0056)***
Public Health	---	0.0244(0.0056)***	0.0293(0.0058)***
Family	---	0.0406(0.0057)***	0.0426(0.0059)***
Labour Market Programmes	---	0.1020(0.0271)***	0.0974(0.0281)***
Unemployment Aid	---	-0.0687(0.0085)***	-0.0718(0.0088)***
Education	---	0.0247(0.0037)***	0.0265(0.0039)***
GDP Per Capita	---	0.0371(0.0198)*	0.0337(0.0204)*
GDP Growth	---	-0.0333(0.0078)***	-0.0333(0.0081)***
Unemployment Rate	---	0.0181(0.0040)***	0.0201(0.0042)***
Employment Protection	---	0.0082(0.0096)	0.0010(0.0099)
Gini	---	0.3720(0.1880)**	0.4510(0.1990)**
Attitude	---	-0.0034(0.0009)***	-0.0032(0.0010)***
Integration Index	---	-0.0021(0.0007)***	-0.0023(0.0007)***
Network Effects			
Stock	-5.73e-06 (1.96e-06)***	---	-7.85e-06 (3.14e-06)**
Costs			
Colony	-0.0582(0.0183)***	---	-0.0868(0.0187)***
Language	0.0428(0.0124)***	---	0.0063(0.0135)
Distance	0.0006(0.0001)***	---	0.0001(0.0001)
Observations	3 818	3 734	3 497
Pseudo R^2	0.0676	0.1260	0.1832

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

As a stand-alone result, the tax rate coefficient would indicate that tertiary educated are more affected by the welfare magnet theory as presented by Borjas (1999). The tax rate-variable is in such circumstances argued to act as a welfare state indicator. A further explanation of tertiary educated migrant's preferences for the spending of government tax revenues is found amongst the variables related to public spending. All are significant at the 1 % level and show that tertiary educated, in relation to the non-tertiary educated, prefer governmental spending to be focused to the areas of health care, education, family and labour market programmes. On the other hand, unemployment aid and expenditures on government pensions, residential care and other issues related to old age is less positively received. One can see patterns that grants and spending aimed to uphold a minimum standard of living for citizens generally have a negative impact on the share of tertiary educated. On the other hand, governmental spending on public benefits has the opposite effect as well as interventions aimed to combat unemployment.

GDP per capita, GDP growth and Unemployment rate are all acting as proxies for the relative economic attractiveness of the destination countries. GDP per capita is found to positively affect the share of highly educated at the 10% significance level determinant, whereas GDP growth rate is found to have a significant negative impact on the share of tertiary educated. The positive coefficient of the GDP per capita variable indicates that highly educated move to richer countries than their counterparts. As suggested by Neumayer (2004), the negative impact of GDP growth rate on migration could be explained by the fact that poorer countries tend to have higher growth rates than rich countries, due to its convergence-nature. He further states that the general level of economic development, which is quite persistent over time, has a stronger impact on the economical attractiveness of a destination country than short-term fluctuations such as economic growth and unemployment rates (Neumayer, 2004). That richer countries tend to be more attractive than poor countries could thus explain the observation. The results suggest this to be an issue more prevalent among tertiary educated, e.g. that tertiary educated in general move to more developed countries than the non-tertiary educated.

The positive sign of unemployment rate indicates that tertiary educated are less affected than non-tertiary educated by the aggregate population's difficulties to gain access to the labour market at their destination choice. This finding is not surprising, as there exists a positive relationship between educational level and employment rates (OECD, 2011). As stated in the OECD Paper "Education at a Glance", 84 % of the OECD population with tertiary education

is employed. The number falls to 74 % for people with upper secondary education and a further drop to 56 % can be observed for people without an upper-secondary education. The intuition is that highly educated are less affected by unemployment rates, as they are employed to a greater extent. An important note regarding the observation that skilled migrants are less affected by unemployment rates is that it in no way indicates that a positive relationship exists between unemployment rates and their choice of destination, or that they are indifferent. To the contrary, Geis et al. (2008) found evidence to support that there exist a negative relationship between high-skilled migrants' destination choice and destination country unemployment rates. The evidence presented above also indicates that highly skilled migrants assign a higher value than other migrants to government interventions aimed at decreasing unemployment rates through increased incentives for employment as well as through facilitating entrance to the labour market.

The hypothesis regarding employment protection is that it should affect the availability of low-paid jobs the most. This decreases the likelihood of obtaining a job for the unemployed (among which the non-tertiary educated are overrepresented). Employment protection should thus in general affect low-skilled migrants negatively compared to skilled migrants. Although, no indication of any effect of educational level on job security preferences can be found due to the insignificance of the result.

Positive attitude towards migrants, as captured by the percentage of people in destination countries who think that their area of residence is a good place for migrants to live, is on the other hand found to have a significant negative impact on share of tertiary educated migrants. The observation indicate that skilled migrants put less value to citizen attitudes. Though, it has been argued that people with higher levels of education have more positive attitudes towards immigration (Hainmueller & Hiscox, 2007). Perhaps migrants with high education interact with other people with high education to a greater extent and in such a way are less affected by the aggregate population´s attitudes. An additional explanation could be that highly educated do not identify as someone that will be subject to discrimination or racism, and therefore are less affected by that aspect.

The variable *Integration Index* is found to have a significant negative impact on the relative share of tertiary educated. In general, high skilled migrants are subject to less restrictions and limitations in terms of residence permits etc which in part could explain these observed

differences.

The *Stock* variable measured in thousands of migrants from the same origin country, is found to have relatively small negative effect at the 5 % significance level. The variable takes on values of 0 and as high as 100.000 (USA-MEX), with the mean value 19.03115 and median as low as 0.524. The negative effect indicates that tertiary educated put less value to network effects. In general, low skilled workers should be more dependent on family and friendship ties as these relationships can act as references in the search for job and housing. Educated migrants can instead rely on their education as an independent indicator of their ability and are thereby more independent in this aspect.

Only one variable amongst the variables measuring costs of migration is found to have a significant effect when controlling for pull factors and that is colony. The negative sign indicates that cultural distance, as proxied by colony, is less influential with regards to destination choice for tertiary educated than for non-tertiary educated migrants. This finding could partly be explained by the fact that a shared colonial often correlate with shared language. A negative sign on the language-variable would have supported this theory but unfortunately, due to the insignificance of the results, no conclusion can be drawn in that aspect. Further, multilingualism as well as English proficiency should in general be more prevalent amongst the higher educated which could explain the decreased impact of cultural similarities.

5.1 Robustness checks

Several measures are taken so as to check the robustness of the results. To start with, the issue of missing values within the educational attainment-variable is addressed through the exclusion of missing values (see Table 2 below). 18 out of the 32 countries initially included in the data have no missing values pertaining to the educational attainment variable. 4 of those countries have more than 10 % missing values whereas 2 countries have more than 50 % missing values. Missing values relating to the educational attainment variable includes both those who have not stated their education as well as those who have not obtained any education. There is not possibility to differentiate between the two, which as previously described limits the scope of this paper. The question remains if countries with missing values suffer from a selection bias in the aspect of those migrants that has not stated their educational

level. For example, migrants with higher education might be more prone to answer the question of educational attainment than migrants with lower educational attainment.

Table 2 – *Presents average marginal effects when missing values*[6]

	(1)	(2)	(3)	(4)
VARIABLES	All	< 50% missing	< 10% missing	0% missing
Pull Factors				
Tax Rate	0.0054(0.0008)***	0.0051(0.0009)***	0.0056(0.0009)***	-0.0007(0.0028)
Old Age	-0.0535(0.0056)***	-0.0545(0.0057)***	-0.0631(0.0070)***	-0.1050(0.0150)***
Public Health	0.0293(0.0058)***	0.0217(0.0072)***	0.0245(0.0073)***	0.0575(0.0090)***
Family	0.0426(0.0059)***	0.0421(0.0060)***	0.0381(0.0059)***	-0.0321(0.0152)**
Labour Market Programmes	0.0974(0.0281)***	0.1800(0.0437)***	0.0877(0.0539)	1.0120(0.2120)***
Unemployment Aid	-0.0718(0.0088)***	-0.0854(0.0157)***	-0.0624(0.0196)***	-0.0982(0.0382)**
Education	0.0265(0.0039)***	0.0281(0.0039)***	0.0307(0.0057)***	-0.0684(0.0206)***
GDP Per Capita	0.0337(0.0204)*	0.0343(0.0208)*	0.0414(0.0246)*	-0.0399(0.0407)
GDP Growth	-0.0333(0.0081)***	-0.0457(0.0087)***	-0.0591(0.0105)***	-0.0710(0.0248)***
Unemployment Rate	0.0201(0.0042)***	0.0228(0.0046)***	0.0174(0.0051)***	-0.0126(0.0169)
Employment Protection	0.0010(0.0099)	0.0020(0.0104)	0.0287(0.0207)	-0.1450(0.0602)**
Gini	0.4510(0.1990)**	0.5550(0.2160)**	0.2270(0.3290)	1.2380(0.7400)*
Attitude	-0.0032(0.0010)***	-0.0029(0.0010)***	-0.0033(0.0010)***	-0.0052(0.0036)
Integration Index	-0.0023(0.0007)***	-0.0039(0.0009)***	-0.0054(0.0009)***	-0.0098(0.0032)***
Network Effects				
Stock	-7.85e-06 (3.14e-06)**	-7.20e-06 (2.73e-06)***	-7.12e-06 (2.65e-06)***	-3.38e-06 (1.29e-06)***
Costs				
Colony	-0.0868(0.0187)***	-0.0962(0.0193)***	-0.0863(0.0197)***	-0.1030(0.0244)***
Language	0.0063(0.0135)	0.0106(0.0142)	0.0095(0.0142)	0.0006(0.0168)
Distance	0.0001(0.0001)	0.0002(0.0001)*	0.0003(0.0001)**	0.0001(0.0002)
Observations	3 497	3 178	2 846	1 893
Pseudo R^2	0.1832	0.1393	0.1049	0.1249

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

[6] Systematic exclusion of countries with above x % missing values in the variable educational attainment. The regression presented in column (2) excludes all countries with more than 50% missing values. Column (3) excludes countries with more than 10% missing values. Column (4) excludes all countries with missing values.

To control for this possibility, countries are systematically excluded from the data in accordance with percentage of missing values. It seems far off that the large shares of missing values in Denmark and Belgium (73 % and 83 % missing values respectively) should be exclusively pertaining to migrants without any education. This gives strength for the argument to exclude these two countries so as to control for a selection bias problem. Further exclusion of countries with more than 10 % missing values renders in the exclusion of Sweden and Norway (with 28 % and 29 % missing values respectively).

No major differences can be observed in regressions presented in column 1, 2 and 3 (see Table 2). The fourth column presents the regression that is based on only 18 destination countries, e.g. those with 0 % missing values. Among the observable differences here is the sign-shifting that occurs in six variables. Three of them (GDP per capita, Unemployment rate and Attitude) simultaneously become insignificant. The variable Education is significant at the 1 % level throughout all combinations but shifts to a negative signs in the 0 % missing values regressions. The same holds for Family with the exception of a reduced significance level to 5 % in the fourth regression. The variable Employment protection is insignificant in all regressions except the 0 % missing values where it shows a negative sign, significant at the 5 % level.

One could argue that countries that are less restrictive in their migration policies, for example through not discriminating between educational levels, would be more prone to receive migrants without any education. This would increase their share of missing values as pertaining to this regression. Excluding these countries as a whole would then render in the exclusion of an important aspect relating to immigration restrictions. Whether this is an explanation for the relatively large differences observed in the 0% missing values regression is yet to be concluded and thus calls for further research.

Further, a possible issue could be related to the fact that the dependent variable is constructed as a share. Migrants' movements between a source and destination combination can consists of very few persons. For example, if only 1 person has migrated from A to B and if that person is tertiary educated, that country combinations share will be recorded as 100 % tertiary educated. That share is then treated equally to a source-destination combination in which

100/100 migrants are tertiary educated. This issue is addressed in table 3, in which a regression is performed where all country combinations with less 30 migrants are excluded. Only smaller differences can be observed when compared to the initial regression, mainly relating to significance levels.

Table 3 - *Excluding country combinations with 30 or less migrants.*

VARIABLES	All variables	≥30 migrants
Pull Factors		
Tax Rate	0.0054(0.0009)***	0.0029(0.0010)***
Old Age	-0.0535(0.0056)***	-0.0400(0.0070)***
Public Health	0.0293(0.0058)***	0.0359(0.0061)***
Family	0.0426(0.0059)***	0.0356(0.0060)***
Labour Market Programmes	0.0974(0.0281)***	0.0633(0.0325)*
Unemployment Aid	-0.0718(0.0088)***	-0.0750(0.0101)***
Education	0.0265(0.0039)***	0.0165(0.0043)***
GDP Per Capita	0.0337(0.0204)*	0.0521(0.0215)**
GDP Growth	-0.0333(0.0081)***	-0.0192(0.0091)**
Unemployment Rate	0.0201(0.0042)***	0.0249(0.0048)***
Employment Protection	0.0010(0.0099)	0.0068(0.0108)
Gini	0.4510(0.1990)**	-0.1130(0.2130)
Attitude	-0.0032(0.0010)***	0.0007(0.0013)
Integration Index	-0.0023(0.0007)***	-0.0045(0.0008)***
Network Effects		
Stock	-7.85e-06 (3.14e-06)**	-7.08e-06 (2.81e-06)**
Costs		
Colony	-0.0868(0.0187)***	-0.0758(0.0182)***
Language	0.0063(0.0135)	-0.0040(0.0127)
Distance	0.0001(0.0001)	0.0004(0.0001)***
Observations	3 497	2 569
Pseudo R^2	0.1832	0.1163

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The Distance variable is now significant on the 1 % level in the restricted regression, whereas GINI and Attitude switches signs and simultaneously become insignificant. Labour market

programmes and GDP growth face a reduction in significance levels in the restricted model whereas GDP per capita increases from 10 % to a 5 % significance level. The overall reductions in significance levels could be related to the reductions in amounts of observations. Restricting the regression to observations with more than 30 migrants lead to an exclusion of about 26,5 % of the observations (country combinations) included in the initial regression.

Variance inflation factor (VIF) is obtained to test for multicollinearity - meaning that two or more independent variables are highly correlated to the extent that they don´t provide information that is unique and/or independent. Appendix A presents the percentage variation in every individual independent variable that is explained by the other independent variables. A rule of thumb, as presented by Gujarati (2003), is that a variable is said to be highly collinear if the unique variation is 10% or lower. Such is not the case for any of the variables presented in this paper.

It is virtually impossible to control for all possible variables that could affect the outcome of the share of tertiary educated, which is a limitation faced by everyone performing a multiple regression. The issue of over controlling further restricts the ability to include additional variables. Nevertheless, it is quite probable that the results presented in this paper suffer from an omitted variable bias, the question being the extent of the issue. The final robustness check performed is thus related to the issue of omitted variable bias. A panel data set is created through the use of the duration of stay variable in the 2010/2011 data set. The flow of migrants in the two time periods are calculated using the definitions of duration of stay "less than 5 years" and "5-10 years". The two time periods in the panel data set thus pertains to the flow of migrants in 2000/2001 - 2005/2006 and the flow of migrants in 2005/2006 – 2010/2011. All country combinations included in 2010/2011 are not included in the 2005/2006 data, which leads the panel data set to include 3139 destination- and origin country combinations.

A regression is then performed in which destination country-specific fixed effects are controlled for (Equation 8 in the model-section). Examples of such fixed effects could be nation-specific policies that are time invariant. As presented in table 4, only the three variables Distance, Network Effects and Colony are found to be significant in this regression. These variables are of similar magnitudes and have identical signs as the previous probit estimations of the cross sectional data set. All other variables are found insignificant and the

overall impression is that the results, when controlling for country specific fixed effects, are inconclusive. Thus, no conclusion can be drawn with regard to the issue of omitted variable bias.

Table 4: *Regressions based on (1) cross sectional data, (2) panel data, (3) panel data controlling for country specific fixed effects*

	(1)	(2)	(3)
VARIABLES	Marginal Effects	Marginal Effects	Marginal Effects
Pull Factors			
Tax Rate	0.0054(0.0009)***	0.0028(0.0006)***	-0.0039(0.0058)
Old Age	-0.0535(0.0056)***	-0.0374(0.0035)***	-0.0165(0.0158)
Public Health	0.0293(0.0058)***	0.0376(0.0044)***	-0.0362(0.0325)
Family	0.0426(0.0059)***	0.0409(0.0045)***	0.0658(0.0483)
Labour Market Programmes	0.0974(0.0281)***	0.0735(0.0181)***	-0.0950(0.0723)
Unemployment Aid	-0.0718(0.0088)***	-0.0646(0.0059)***	0.0299(0.0250)
Education	0.0265(0.0039)***	0.0150(0.0026)***	-0.0003(0.0266)
GDP Per Capita	0.0337(0.0204)*	0.0114(0.0128)	-0.1560(0.1010)
GDP Growth	-0.0333(0.0081)***	0.0046(0.0038)	0.0092(0.0107)
Unemployment Rate	0.0201(0.0042)***	0.0111(0.0020)***	0.0028(0.0059)
Employment Protection	0.0010(0.0099)	-0.0109(0.0065)*	0.0615(0.0525)
Gini	0.4510(0.1990)**	0.2790(0.1410)**	-0.4860(0.5260)
Attitude	-0.0032(0.0010)***	-0.0018(0.0007)**	0.0136(0.0159)
Integration Index	-0.0023(0.0007)***	-0.0009(0.0005)*	0.0035(0.0139)
Network Effects			
Stock	-7.85e-06 (3.14e-06)**	-8.59e-06 (2.46e-06)***	-6.53e-06 (1.92e-06)***
Costs			
Colony	-0.0868(0.0187)***	-0.0640(0.0127)***	-0.0689(0.0129)***
Language	0.0063(0.0135)	0.0050(0.0090)	-0.0074(0.0087)
Distance	0.0001(0.0001)	0.0002(7.32e-05)***	0.0003(7.70e-05)***
Fixed effects	No	No	Yes
Observations	3 497	6 278	6 278
Pseudo R^2	0.1832	0.0559	0.0709

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

A standard probit regression is performed on the panel data set so as to check that the inconclusive results of the country specific fixed effects estimations are not due to differences across the panel and cross sectional data. The panel data set contains a larger number of observations due to the presence of two time periods but the amount of countries decrease in numbers. No major differences between the two regressions are discovered. The signs of the coefficients as well as significance levels are in general coherent across tables. The exception lies in the variables GDP growth, Attitude and Employment protection that are found to be insignificant in the panel data set and the variable Distance that is significant at the 1 % level. The reduction in significance levels could possibly be attributed to the decrease in amounts of destination countries observed.

5.2 Further discussion

The creation of a larger panel data set covering more than one time period, without greatly limiting the amount of observations, would be of interest to establish the reliability of the results presented. This is a reasonable wish as an updated version (a 2015/2016 data set) of the DIOC database is expected to follow within the coming years.

In addition, this paper is limited in the aspect of illiterate migrants which in turn creates uncertainty about missing values. Including the ability to separate the illiterate migrants and missing values, e.g. through the inclusion of an educational level 0 into the DIOC data set, would further improve the reliability of the results. Investigating the impact of illiteracy on destination choices would be an interesting addition the research presented in this paper. As this paper is limited in the aspect of differentiating between groups of migrants, it would also be of interest to extend the research question to specific migrant groups, for example refugees, asylum seeker and labour migrants.

6 Conclusion

Skill-level composition of immigrant flows plays a pivotal role in stimulating investments and economic growth (Muysken et al., 2011). Low skilled workers are disproportionally represented in unemployment rates (Oesch, 2010). In addition, excess demand of highly educated people acts to decreases the incentives of hiring low skilled workers (Zimmermann,

2004). Further, there exists a positive relationship between migrants' educational attainment and their contribution to growth (Muysken et al., 2011).

Destination countries are thereby faced with the problem of selective immigration. It is in their interest to influence their relative attractiveness, so as to attract a larger share of highly educated. This study investigates the impact of education on migrants' destination choices so as to provide adequate knowledge regarding the preferences of highly educated migrants.

The model developed utilises the assumptions of individual utility maximizations in combination with previous research on the fundamental determinants of migrants' destination choices. The previous research is applied through the inclusion of independent variables controlling for destination country pull factors, costs of migration and network effects. Primary data observing migration flows between 39 destination- and 235 origin countries as well as the migrant's educational attainments during the years 2005-2011 are then combined with observations regarding the independent variables. The preferences of the highly educated in their choice of destination country are observed through a probit regression of the relative share of tertiary educated on this set of independent variables.

This study has presented evidence that highly educated migrants are less hindered by indirect costs such as social distance, which could be explained by higher levels of multilingualism and English proficiency among the highly educated. The negative impact of education on network effects has been argued to relate to education acting as a independent indicator of ability.

Among the most interesting result presented in this study is the observation that tertiary educated migrants exhibit a more positive attitude towards higher tax rates than their less educated counterparts. In addition, contradictory evidence indicating that highly educated are drawn to areas with greater inequality are presented. The proposed argument is that education might lead highly educated to see beyond the immediate monetary losses associated with a higher tax rate through facilitating the understanding of welfare states and their benefits. The issue of contradictory evidence is circumvented by presenting the argument that the GINI-variable could act as a proxy for the yield of investing in education, and not as a proxy for inequality.

A further look at preferences for government tax revenue spending reveal expenditures aimed to uphold a minimum standard of living for individuals (such as unemployment aid, government pensions etc.) to be more negatively received by the high skilled migrants. The preferred expenses are found to be in areas utilized by the general public, such as health care and education. Expenditures aimed to facilitate entrance into the labour market is highly valued by tertiary educated, whereas negative attitudes towards migrants amongst the destination population affects their destination choice less. The impression is that grants and spending aimed to uphold a minimum standard of living for individuals generally have a negative impact on the share of tertiary educated whereas governmental spending on areas benefiting the general public is found to have a positive effect.

Further research into the validity of the proposed arguments above would be of great interest. In addition, investigation the impact of illiteracy as well as differentiating between groups of migrants would constitute interesting research material.

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Appendix

Appendix A:

Variance Inflation Factor (VIF) table [7]

Variable	VIF	1/VIF	TOL
Attitude	7.40	0.135209	0,864791
Old Age	7.31	0.136709	0,863291
Labour Market Programmes	4.59	0.217720	0,78228
Tax Rate	4.28	0.233404	0,766596
GDP Per Capita	4.26	0.234581	0,765419
Education	3.98	0.251105	0,748895
Unemployment Rate	3.96	0.252779	0,747221
GDP Growth	3.64	0.274805	0,725195
Integration Index	3.19	0.313100	0,6869
Gini	2.86	0.349108	0,650892
Unemployment Aid	2.82	0.355101	0,644899
Employment Protection	2.78	0.359246	0,640754
Public Health	2.07	0.483510	0,51649
Family	1.86	0.536539	0,463461
Language	1.42	0.702864	0,297136
Colony	1.28	0.780099	0,219901
Distance	1.19	0.843388	0,156612
Stock	1.05	0.956066	0,043934
Mean VIF	3.33		

[7] Variance inflation factor (VIF) is a test for multicollinearity – meaning that two or more independent variables are highly correlated to the extent that they don´t provide information that is unique and/or independent. TOL presents the percentage variation in every independent variable that is explained by the other independent variables. A rule of thumb, as presented by Gujarati (2003), is that a variable is said to be highly collinear if the unique variation is 10% or lower (e.g. if VIF is equal to or exceeds 10).

Appendix B

Cross sectional data

Variables	Source	Dataset	Year/-s	Gathered
GDPC	WDI	GDP per capita (current US$)	2004-2009	28/3-16
GDPG	WDI	GDP growth (annual %)	2004-2009	28/3-16
Colony	CEPII	GeoDist	Constant	22/3-16
Language	CEPII	GeoDist	Constant	22/3-16
Distance	CEPII	GeoDist	Constant	22/3-16
Employment protection	OECD	OECD Employment protection indicators published in 2009 (EP_v2)	2005-2008	8/4-16
Unemployment rate	WDI	Unemployment, total (% of total labor force)	2004-2009	28/3-16
Tax rate	WDI	Total tax rate (% of commercial profits)	2005-2009	28/3-16
Unemployment aid	OECD	SOCX	2005 & 2009[1]	26/4-16
Old age	OECD	SOCX	2005 & 2009	26/4-16
Family	OECD	SOCX	2005 & 2009	26/4-16
Public health expenditure	OECD	SOCX	2005 & 2009	26/4-16
Active labour market programmes	OECD	SOCX	2005 & 2009	26/4-16
Stock	OECD	DIOC	-2005/2006	14/4-16
Gini	OECD	Income Distribution and Poverty	2008[2]	8/5-16
Attitudes	OECD	Indicators of Immigrant Integration 2015 Settling In	2012	26/4
Education	WDI	Government expenditure on education, total (% of government expenditure)	2006-2009[3]	13/4-16
Integration index	MIPEX		2010[4]	14/5-16

[1] Data for Mexico not available.
[2] Based on data available from 2006 with the exception of Chile, Hungary, Turkey (2009) Switzerland (2011).
[3] Based on the data available between 2006-2009 with the exception of Greece (2000), Switzerland (2009-2010) and Turkey (2006), Luxembourg (not available).
[4] Data missing for Chile, Israel and Mexico.

Appendix C

Panel data

Variables	Source	Dataset	2010/2011	2005/2006	Gathered
GDPC	WDI	GDP per capita (current US$)	2004-2009	1999-2004	28/3-16
GDPG	WDI	GDP growth (annual %)	2004-2009	1999-2004	28/3-16
Colony	CEPII	GeoDist	Constant	Constant	22/3-16
Language	CEPII	GeoDist	Constant	Constant	22/3-16
Distance	CEPII	GeoDist	Constant	Constant	22/3-16
Employment protection	OECD	OECD Employment protection indicators published in 2009 (EP_v2)	2005-2008	1999-2004	8/4-16
Unemployment rate	WDI	Unemployment, total (% of total labor force)	2004-2009	1999-2004	28/3-16
Tax rate	WDI	Total tax rate (% of commercial profits)	2005-2009	2005[3]	28/3-16
Unemployment aid	OECD	SOCX	2005 & 2009	2000 & 2005	26/4-16
Old age	OECD	SOCX	2005 & 2009	2000 & 2005	26/4-16
Family	OECD	SOCX	2005 & 2009	2000 & 2005[4]	26/4-16
Public health expenditure	OECD	SOCX	2005 & 2009	2000 & 2005	26/4-16
Active labour market programmes	OECD	SOCX	2005 & 2009	2000 & 2005[5]	26/4-16
Stock	OECD	DIOC 2010/2011	-2005/2006	-2000/2001	14/4-16
Gini	OECD	Income Distribution and Poverty	2008[1]	2004[6]	8/5-16
Attitudes	OECD	Indicators of Immigrant Integration 2015 Settling In	2012	2012	26/4
Education	WDI	Government expenditure on education, total (% of government expenditure)	2006-2009[2]	2000 & 2006[7]	13/4-16
Integration index	MIPEX		2010[8]	2010[8]	14/5-16

[1]Based on data available from 2006 with the exception of Chile, Hungary, Turkey (2009) and Switzerland (2011).
[2]Based on the data available between 2006-2009 with the exception of Greece (2000), Switzerland (2009-2010) and Turkey (2006).
[3] Based on data available from 2005 with the exception of USA (2013).
[4] Based on data available from 2000 and 2005 with the exception of Turkey (2005).
[5]Based on data available from 2000 and 2005 with the exception of Slovenia (2005).
[6] Based on data available from 2004 with the exception of Hungary, New Zealand (2003), Israel, Netherlands, Denmark (2005) Chile (2006) and Switzerland (2009).
[7]Based on the data available between 2000-2006 with the exception of Switzerland (2009).
[8] Data missing for Chile, Israel and Mexico.
Unemployment aid: Mexico data not available.
Education: Luxembourg data not available.